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AUTHOR Mays, Eileen
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ABSTRACT

The purpose of this study was to examine possible relationships between moral and cognitive development in second- and fifth-grade children. Sixty children were used in the study. Levels of cognitive development were evaluated using four learning tasks and moral development was assessed by presenting four conflicting situations to each subject for discussion purposes. Recorded personnel interviews were used for the purpose of evaluation. The outcome of this study tended to confirm the position taken by others that cognitive development parallels or precedes moral development in the process of intellectual growth. The data indicated that children at a higher level of cognitive development were either at a correspondingly higher level or at a lower level of moral development. The levels of moral development were not shown to advance significantly over the levels of cognitive development. (Author/EB)

THE RELATIONSHIP OF MORAL AND COGNITIVE MODES OF THOUGHT IN SECOND AND FIFTH GRADE CHILDREN

Paper Presented

By

Eileen Mays

Indiana University Northwest
Gary, Indiana

National Association for Research
in Science Teaching

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Eileen Mays
Indiana University Northwest

The purpose of the study was to examine possible relationships between moral and cognitive development in second and fifth grade children. The relationship was first proposed by Piaget (1932) and later empirically verified and expanded by Kohlberg (1968, 1970, 1971).

Sixty children, male and female, from second and fifth grades in an elementary school located in Iowa City, Iowa were used in this study. Levels of cognitive development were evaluated by presenting each subject with four tasks: conservation of liquid amount, addition of classes, 3-attribute multiplicative classification and complementary perspectives. The level of moral development was assessed by presenting four conflict situations to each subject: reciprocity concerned with value of life and punishment, conservation of values sifting promise to peers and response to authority, perspective of viewpoint analyzing peer need and rules, and reciprocity questioning and roles of a citizen and a humanitarian.

The subjects were interviewed individually and the interview was recorded for the purpose of evaluation. A level of development was assigned based on the performance of each subject on each task. The scoring criteria of the cognitive tasks were based on the students' ability to give logical responses relative to each task (Inhelder and Piaget, 1964; Piaget, 1965, 1967). Criteria established by Kohlberg (1963) were used as the substructure in scoring the moral judgment responses of the students for each task. Cognitive task responses were classified either preoperational or concrete operational. The subjects' responses on the moral development tasks patterned either the preconventional or conventional level as

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described by Kohlberg (1969).

Reliability of the scoring technique for the moral judgment and cognitive measures was determined by a random selection of ten interviews. These interviews consisting of 80 protocols were independently scored according to the scoring criteria by a second person who had studied the work of Piaget and who had previous experience in the evaluation of interview measures. The results were compared with the investigator's scores and in instances of disagreement, the discrepency between the two scorers' classification of a subject never involved more than one interval. The average percentage of interscorer agreement for each cognitive and moral judgment task was 94%.

The nonparametric chi-square test for independent samples (Siegel, 1956) was used to examine the following:

(1) The relationship between the performance of males and females on the cognitive tasks and on the moral judgment tasks at each grade level.

(2) The relationship between the grade level of the subject and performance on the cognitive tasks and on the moral judgment tasks.

(3) The relationship between the performance on each cognitive task and on each moral judgment task at the grade levels represented.

Analysis of data indicated that the level of performances on all Piaget-type cognitive tasks and on three of four moral judgment tasks were not related to the sex of the subject at each grade level. The relationship of the moral judgment responses on the fourth task, TM_4--Reciprocity, and the sex of the subject was found to be significant at the .05 level (Table 1).. Females (13%) in the second grade were less likely to consider the intent of the story figure in the conflict situation than the males (53%) in the same grade. This task required the subject to consider concepts of authority, law, crime, punishment, the roles of a citizen and a humanitarian. Although most of these concepts had been treated previously in other tasks, the combination of concepts and the situation were unique to this task.

Table 1

Results of Test for Relationship Between Sex and Performance on Each Moral Judgment Task--Grade 2

Moral Judgment Task	Level of Moral Judgment	Percentage of Subjects Grade 2' Males (n = 15)	Females (n = 15)	Chi-Square
TM_1	C	0	7	
	PC	100	93	1.04
TM_2	C	0	13	
	PC	100	87	2.04
TM_3	C	13	7	
	PC	87	93	0.28
TM_4	C	53	13	
	PC	47	87	5.39*

N = 30

*Significant at the .05 level

Critical chi-square = 3.84, df = 1, alpha = .05

TM_1-- Reciprocity

TM_2-- Conservation of Values

TM_3-- Perspective of Viewpoints

TM_4-- Reciprocity

C -- Conventional(Level II)

PC -- Preconventional (Level I)

The grade level of the subject was related to the level of performance on all cognitive tasks and on three of the four moral judgment tasks (Table 2, 3). A significant difference between grade level and task performance was reported either at the .01 or .05 level. Fifth grade subjects tended to perform at a higher level of cognitive development (concrete operational) and of moral judgment (conventional) than second grade subjects.

The level of performance on the moral judgment task, TM_1--Reciprocity, was found not to relate to the grade level of the subject (Table 3). This task was concerned with the value of life and the risk of stealing. The subjects' responses (88%) were generally focused on the fear of punishment, either of imprisonment resulting from theft or of losing the confidence of friends and relatives. Although the concept of punishment in terms of imprisonment was treated in the moral judgment task, TM_4--Reciprocity, less than half (48%) of the subjects were preconventional (authority-punishment oriented) in their responses and these responses were related to grade level. The data seemed to indicate that the subject was less inclined to consider the intent of the story figure when the consequences of an act appeared severe to the subject. McKechnie (1971), reporting a study of elementary school children in Scotland, stated that a child will use intention as a criterion where the consequences are relatively unimportant, but will return to the use of consequences if they are large enough to be seen as important.

A relationship between the subjects' performances on each moral judgment task and on each cognitive task was not established in 15 of the 16 relationships examined. However, a relationship between the subjects' performance on cognitive task, TC_4--Complementary Perspectives, and moral judgment task, TM_3--Perspective of Viewpoints, was reported at the .05 level (Table 4). These two tasks were the only paired tasks that measured the same concept, i.e., the ability to project another's viewpoint at a complex level.

Table 2

Results of Test for Relationship Between Grade Level and Performance on Each Cognitive Task

Cognitive Task	Level of Performance	Number of Subjects Grade 2	Grade 5	Chi-Square
TC_1	P	16	26	
	F	14	4	6.43*
TC_2	P	21	29	
	F	9	1	5.88*
TC_3	P	2	12	
	F	28	18	7.55**
TC_4	P	3	12	
	F	27	18	5.68*

N = 60

*Significant at the .05 level
**Significant at the .01 level

Critical chi-square = 3.84, df = 1, alpha = .05
Critical chi-square = 6.64, df = 1, alpha = .01

TC_1--Conservation of Liquid Amount

TC_2--Primary Addition of Classes

TC_3--Bi-univocal Multiplication of Classes

TC_4--Complementary Perspectives

P -- Pass(Concrete Operational)
F -- Fail(Preoperational)

Table 3

Results of Test for Relationship Between Grade Level and Performance on Each Moral Judgment Task

Moral Judgment Task[a]	Level of Moral Judgment	Number of Subjects Grade 2	Grade 5	Chi-Square
TM_1	C	1	6	
	PC	29	24	2.59*
TM_2	C	2	12	
	PC	28	18	7.55*
TM_3	C	3	16	
	PC	27	14	11.09**
TM_4	C	10	21	
	PC	20	9	6.67*

N = 60

*Significant at the .01 level
**Significant at the .001 level

Critical chi-square = 6.64, df=1, alpha = .01.
Critical chi-square =10.83, df=1, alpha = .001

[a]Identification of Moral Judgment Task on Table 1

Table 4

Results of Test for Relationship Between Performance on Each Moral Judgment Task and Performance on Cognitive Task 4--Complementary Perspectives

Moral Judgment Task[a]	Level of Moral Judgment	Number of Subjects Cognitive Task 4 Pass	Fail	Chi-Square
TM_1	C	3	4	
	PC	12	41	0.48
TM_2	C	5	9	
	PC	10	36	0.49
TM_3	C	9	10	
	PC	6	35	5.77*
TM_4	C	11	19	
	PC	4	26	3.20

N = 60

*Significant at the .05 level

Critical chi-square = 3.84, df = 1, alpha = .05

[a]Identification of Moral Judgment Tasks on Table 1

C--Conventional (Level II)
PC--Preconventional (Level I)

P--Pass(Concrete Operational)
F--Fail(Preoperational)

The cognitive task, TC_4--Complementary Perspectives, required the subject to establish relationships between the objects and between the objects and the observer. This task was the only cognitive task requiring projection of viewpoints. The moral judgment task, TM_3--Perspective of Viewpoints, required the subject to identify his position as well as to project the position of five story figures relative to the conflict situation. Although other moral judgment tasks required the projection of viewpoints, none of the other tasks required as many projected positions. The greater ability to take another's perspective was identified with a higher level of moral development.

When the frequency of conventional responses on moral judgment tasks was compared to the frequency of concrete operational responses on the cognitive tasks, the higher cognitive level led the higher moral judgment level in more than two-thirds of the responses given by fifth grade subjects (Table 5). A similar pattern was reported for the responses of the second grade subjects. The levels of moral development were shown to advance over the levels of cognitive development in only 1 out of 10 responses. Overall the higher level of moral development was found to lag behind the higher level of cognitive development in this study.

The outcome of this study tended to confirm Kohlberg's (1970) position that cognitive development parallels or precedes moral development in the process of intellectual growth. The data indicated that children at a higher level of cognitive development were either at a correspondingly higher level or at a lower level of moral development. The levels of moral development were not shown to advance significantly over the levels of cognitive development.

The lag of moral development behind cognitive development observed in this study was reported by others (Kuhn, et al., 1971; Keasey and Keasey, 1973). Two suggested explanations for this occurrence were: (1) the lack of experience on the part of children in confronting issues in the social world, and (2) the existence of a structural decalage, that is, the structures successively applied to the physical world had not been generalized to the social world.

Table 5

Percentage of Conventional Responses on Moral Judgment Tasks to Concrete Operational Responses on Cognitive Development Tasks at Each Grade Level

Grade	Conventional Responses > Concrete Operational Responses	Conventional Responses = Concrete Operational Responses	Conventional Responses < Concrete Operational Responses
2	10	10	80
5	10	23	67

Science educators are presently making decisions that will affect the direction of science education and the design of future curricula (Hurd, 1973). The directions for the future of science education suggest the inclusion of science and society and the teaching of moral values through science (Fox, 1973).

If approaches such as science and society and the teaching of moral values through science are adopted, then the treatment of such concepts will charge the writers of new curriculum programs with the responsibility of meeting both the cognitive and moral development needs of the students. When science and related social issues are identified within the range of the student's level of cognitive and moral development, then, perhaps as a result of such experiences, future research will point to a decrease in the currently recognized lag of moral development as related cognitive development in children.

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